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## FEN *VERSUS* MARSH.

BY THOMAS SOUTHWELL, F.Z.S.

IN the Introduction to his 'Birds of Norfolk,' the late Mr. Stevenson gave an admirable description of the physical features of the county of Norfolk, in which he pointed out that its surface might be sharply divided into six very distinct sections, both with relation to the very marked characters of each area, and also in the light of its distinctive fauna and flora. These divisions, which may be traced with the greatest precision on the map, he designated—1st, "the Broad" district, including the great alluvial plains bordering the sluggish rivers of East Norfolk, which have always hitherto been known as "Marshes," Reed Ronds, or Levels; 2nd, the "Cliff"; 3rd, the Meal, consisting of sandy warrens and salt-marshes near the coast; 4th, the "Breck," consisting of the extensive (for the most part unenclosed) lands and sheep-walks to the west and south-west of the county; 5th, the "Fen," confined to the south-west border; and 6th, the "Inclosed," or more highly cultivated portion, constituting the east central division of the county, extending from north to south. It is only with the first and fifth of these divisions that we have here to deal, and my purpose in contributing the following remarks is to protest against the misuse of the term "Fens," which has of late been frequently applied (*e.g.* in your own Journal, p. 351)\* to the fine tracts, mostly of

\* "Twenty Years on the Norfolk Fens."

splendid grazing "marshes," which characterize the eastern portion of the county of Norfolk, and which term, however correct it may be from a strictly etymological point of view, is certainly in the present case misleading, and a breach of a convenient distinction perfectly understood by the inhabitants of the respective districts.

The "Fen" district of Norfolk is perfectly distinct both in its physical aspect, its geological formation, the character of its inhabitants, and to a considerable extent in its fauna and flora, from the eastern "marshes"; it is entirely confined, as has been said, to the south-western portion of the county, and, although sharply defined on the whole, its outline is much broken. Commencing near Brandon, its eastern boundary follows the high land in an irregular line near to the towns of Hockwold, Feltwell, Methwold, and Stoke Ferry, at which latter point it takes a sudden bend westward along the valley of the Wissey to Fordham, approaching nearly to the river Ouse, and, after sending off a branch along the Nar valley, is continued nearly up to the town of Lynn. To the west it merges in the great Cambridgeshire Fens, and includes the north-west corner of Norfolk, rightly known as "Marshland," the whole forming a portion of the great Bedford Level. Marshland, properly so called, and rightly distinguished even here from the adjoining fens, consists of some 57,000 acres of very fertile land, which have gradually been recovered from the sea by means of artificial embankments, and is absolutely distinct both in name and origin from the adjoining "Fens." In an article entitled "The Fens and Fen-Folk," which appeared in the 'Transactions' of the Norfolk and Norwich Naturalists' Society (vol. iii. p. 610), I endeavoured to convey some idea of the past and present condition of this remarkable tract of country, as well as of its former inhabitants, a totally different race to the hardy sons of Norsemen inhabiting the north and east coasts of Norfolk; to this article I must refer your readers should they care to pursue the subject, but perhaps I may be allowed to quote a few passages from an address which I had the honour to deliver to the same Society at their Annual Meeting in 1894, briefly referring to the same subject:—

"Of the true Fen there is little left to enable any conception to be formed as to its appearance, even, say, a century ago, much



less in still earlier times, when the land was forest clad and inhabited by the Wolf, the Wild Boar, and the Beaver; whilst giant Stags and herds of fierce Urus roamed its glades, and Cranes and Pelicans made their homes in its fastnesses. The trees have been swallowed up by the growing peat, which has also preserved the remains of its vanished fauna. One little spot, however—at Wicken, in Cambridgeshire—no doubt fairly represents one of the aspects of the Fen before modern draining and cultivation had destroyed for ever its former characteristics; here unbroken tracts of Sedge, *Cladium mariscus*, clothe the wet soil, and the dead level is only relieved by an occasional clump of dwarf sallows; the effect, however, is destroyed even here by the 'loads' which convey the water to the draining mill, the tall chimney of which may be seen in the distance.

"The fauna and flora of this district must have been exceptionally interesting; of the latter, doubtless, a fairly accurate conception can be formed, but of the former we have few indications. Whether the Crane ever bred in the Norfolk Fens in historic times is uncertain, but seems probable;\* it appears, however, to have been by no means a rare species.† I think there can be no doubt the Greylag Goose was formerly a regular breeder in this county, as well as in the Fens of Cambridgeshire and Lincolnshire,‡ but when we come to the Bittern, there is no doubt on the subject; till their haunts were destroyed they were extremely plentiful, especially about Poppetot; but now this characteristic denizen of the Fens no longer

‘ Undulates her note  
Like a deep-mouthed bassoon.’

Its former haunts know it no more; but a man from that neighbourhood, with whom Prof. Newton conversed in 1853, assured him that his uncle had killed five Bitterns in one day's shooting, and that his grandfather used to have one roasted every Sunday

\* See 'Birds of Norfolk,' vol. ii. p. 125.

† The Le Stranges of Hunstanton, entertaining the prior of Coxford, Sir Henry Sharbourne, and others, in the year 1520, dined off a Crane, six Plovers, and a brace of Rabbits. This bird is mentioned in the 'Household Book' five times, and is valued at precisely the same sum as the Curlew, varying from 4d. to 6d.

‡ *Op. cit.* vol. iii. p. 3.

for dinner. From the same source Prof. Newton learned that the Herons, now nesting at Didlington, formerly resorted to the sallow bushes and sedges in Hockwold and Feltwell Fens for that purpose, a mode of nesting which they also had recourse to in times past in certain of the reed-beds of the Broads. Redshanks and Ruffs of course abounded, and lingered as long as there were suitable feeding grounds, and even returned in 1853, as Prof. Newton has told us in his interesting paper (*vide infra*), after the great flood had temporarily restored the Fen somewhat to its former condition. Ducks, as may be imagined, were very abundant, and there were Decoys at Stow Bardolph, Hilgay, Methwold, Hockwold, and Lakenheath, where immense numbers of Shovellers, Pintails, Pochards, Gadwals, Wigeon, Teal, and Mallards were taken. A man named Wilson, generally known as 'Old Ducks,' was a great slaughterer of fowl at a Decoy on Methwold 'Severals,' but one Williams, at the Lakenheath Decoy, seems to have been even more successful still.

"The glory of the Fens were the various species of Harrier; these birds must have been especially abundant there, as they were also in the Broad district on the other side of the county. At Poppelot so numerous were they that it is even said the fen-men amused themselves on a Sunday, at a public-house in the centre of the Sedge Fen, by pelting each other with their eggs! Now both the Sedge Fen and the birds which used to inhabit it are gone, but it is remarkable how tenaciously the Harriers held on; constant persecution, however, was too much for them, and first the Marsh Harrier (always far less numerous than the other two species), then the Hen Harrier, and finally Montagu's Harrier, disappeared—the latter most reluctantly, for a long time clinging to one or two favoured spots, but now, I fear, quite restricted to the north-east portion of the county, where a pair or two of this and the Marsh Harrier may still be found in most years; but the Hen Harrier is exceedingly rare. The same fate awaited the Short-eared Owl, which followed in the wake of the Harriers. Another bird common in the Fens was the Grasshopper Warbler, or 'Reeler' as it was called by the sedge-cutters; and yet another, a rarity of the first water, Savi's Warbler, was found breeding at Poppelot.

"Speaking of the Fenland, which lies in the valley of the

Ouse, Spelman says:—‘ All these parts often suffer loss from the river overflowing the marshes, but yet the gain annually is not small (from the fertilizing nature of the waters), besides the great abundance of fish and other water creatures (as wildfowl that are there attracted). This river is, as it were, the milky way to many inland places, for by it they import and export largely merchandise and the necessities of life.’ But this is as nothing to his praises of Lynn, with his remarks on which earthly paradise I must depart out of the Fens. ‘ Lynn,’ says Spelman, ‘ is so well provided by nature with esculents and drinks, that it may seem to be the storehouse both of Ceres and Bacchus; for on its eastern side there is a great abundance of corn, eggs, Rabbits, and land birds, while on the western side there is a like abundance of cheese, butter, Oxen, Swans, and marsh birds; and in the neighbourhood of fish—on the one side sea-fish, and on the other river and fresh-water fish; so that scarcely in all Britain, perhaps in all Europe, is so great an abundance of eatables to be met with in like space.’”

We will now cross the county, and visit the great alluvial plain intersected by sluggish rivers, and studded with open sheets of water known as “ Broads,” lying in the south-eastern corner, and extending southward to Lowestoft, in Suffolk. The rivers are the Bure, the Yare, and the Waveney, with their tributaries flowing through valleys excavated in the glacial beds, the alluvial deposit in which is of great depth, and the process of growing up is still rapidly progressing, whilst the drier portions known as mowing marshes year by year are becoming more solid. In the north are the Horsey and Waxham marshes, further inland the valley of the Bure has its miles of reed-rond and mowing marsh; but the finest stretch of all is the great level plain, affording in summer and early autumn pasturage for innumerable cattle and sheep, through which the traveller by rail passes in his journey from Reedham eastward to Yarmouth, or south-east nearly to Lowestoft. I do not know the extent of the marshes in the valley of the Waveney to which your correspondent, Mr. Farman, refers, there must be many thousands of acres; but, confining my remarks to the county of Norfolk, this great alluvial plain comprises some 14,000 acres. Again quoting from the address before referred to:—

It "forms roughly a triangle, of which the ridge of high land running north for six miles from Reedham to Acle Bridge constitutes the base, and the two sides are represented by the courses of the rivers Bure and Yare, each for a distance of about seven miles in a straight line, converging at Yarmouth, and enclosing a tract of country shown on Faden's fine map, surveyed in the years 1790-94, with but a single marsh-road winding along near its centre, from Halvergate to a point about half-way between Reedham and Yarmouth, where it joins a similar track which follows the river bank from the former place; their joint course is then continued along the north banks of Breydon to the town of Yarmouth.

"Marshall, in his 'Rural Economy of Norfolk,'\* speaking of this great level, significantly remarks that it is 'tolerable in summer,' and then relates his experience of a visit which he paid on the 17th June, 1782. Entering the marshes at Halvergate, he says that for nearly the first mile they rode to their horses' knees in water! They then inspected a marsh-mill, of which Faden's map shows only thirteen in the whole level (these doubtless altogether not equal in efficiency to one of the powerful steam mills which have supplanted them), and, making a sweep towards the middle of the marsh, they returned to Wickhampton, where, he states, the entrance to the marsh was always free from water. This great expanse of marsh was perhaps the finest Snipe ground in England; as many as seventy or eighty couple are there said to have fallen to one gun in a single day; and it formed the breeding-place of thousands of Ruffs, and who can tell what other birds, for there is little known of it and its inhabitants in those days, when only the shepherds and sportsmen ever trod its splashy soil. Although perfectly treeless, this great plain was not one dead level; there were sufficient irregularities to render certain portions drier than others, and these 'hills,' as they were called by the marshmen, formed the nesting-places of the Ruffs, Redshanks, Snipes, and other marsh-loving species, which frequented them in summer in large numbers; whilst on the wooded highlands to the north, along which the old Yarmouth road runs, Herons had their homes; and at Acle

\* Edit. 2, vol. iii. p. 276.

and Mautby were celebrated Duck Decoys, now no longer worked, and earlier still the Cormorants nested at Reedham.

"How changed is all this in the present day! From Acle to Yarmouth an excellent road runs straight across the marshes, whilst a railroad takes much the same course; and a second line of railway follows very nearly the same route as the old riverside track I spoke of earlier. Large sums are expended annually on drainage, and all through the summer, and often far into the autumn, the flat rich marshes are dotted over with cattle and sheep innumerable, luxuriating in the rich herbage."

From an ethnological point of view the men of North and East Norfolk are a vastly superior race to the mixed inhabitants of the Fens; they are silent, and, as might be expected from their lonely life on the sea or in the solitude of the marshes, very superstitious; but they are honest, brave as lions, quarrelsome over their cups like their Viking progenitors, but otherwise gentle as lambs. Not easy of approach, but once their confidence gained they are full of information, and with an abundance of ready wit expressed in a dialect peculiar to themselves. Many a time have I looked with admiration on these stalwart giants, and been struck with the easy grace of their bearing, their finely-cut features, crisp, curly, tawny-coloured hair and beards, the picture of manly beauty—the stuff that our Shovells, Minns, and Nelsons are made of—but such as are never bred in the "Fens."

## FIELD NOTES ON SOME WEST INDIAN BIRDS.

BY PERCY RENDALL, M.D., F.Z.S.

THE Indian name for Trinidad is "Iére," of which the translation is "The Land of the Humming Bird"; and amongst the birds I collected the *Trochilidæ* were one of the chief features. Special interest attached to these collections, since little accurate knowledge was available, owing to the fact that the skins exported had been procured in consequence of the hateful demands created by French *plumassiers*, &c. Though labelled indiscriminately "Trinidad," many of them had been collected on the mainland of Venezuela. Wise legislation in the West Indies has placed some check upon the slaughter of the Hummers, though it has not been entirely stamped out.

There is an old collection of birds in the Victoria Institute which comprises 356 separate species, made by the late Dr. Leotaud, and it includes fourteen different kinds of Humming Birds. The following birds I obtained:—

*Lampornis violicauda*, Bodd. "The Mango-hummer."—As with most other members of this family at the time of year I collected, the chief resort of this species was the "bois immortel" tree, which was then in flower. Two varieties of this tree have been imported, and it is extensively used as "shade" for young cocoa and nutmeg plantations. Though the flowers are different in shade and size, they are apparently both very melliferous, being equally patronized by these birds. There is a popular belief, as ill-grounded as most others, that Humming-birds never perch; this seems almost superfluous to contradict, but let me say that it is their constant practice (though they feed on the wing only, and may visit several trees for that purpose) to resort to a favourite perching-twigs to rest in the intervals.

*Chrysolampis mosquitus*, Linn. "Ruby Topaz."—The commonest species in both Trinidad and Tobago; the specimens I collected cleared up a doubtful point bearing on the plumage of

the adult female (see 'Ibis,' July, 1897, p. 431). I found its nest in February, 1897, and watched it rear its two young in safety.

*Chlorestes cærulea*, Vieill. "Small Emerald."—Under this heading I will describe a ruse I used for attracting small birds, as I believe the necessitated victim belonged to this species. By imitating the high-pitched whistling call of the Pearl Spotted Owlet, I attracted a fine assortment of all the small birds within hearing, who promptly held an indignation meeting. As this procedure generally brought the Owlet as well, it produced the the most amusing scenes. Two of these small spitfires repeatedly hurled themselves, like flashes of light, at the intruder, who seemed only half-awake, whilst the other small birds shrieked in unison. Presently, however, it chanced that Mr. Blinks turned his head just in time to see the winged bullet approaching; up went a feathered leg, a claw closed like a rat-trap, his mouth opened, and there was one gulp, and, quicker than one can write, this little Hummer's career was ended.

*Chlorostilbon caribæus*, Lawr.—This species was far from common, and I only took it in one locality, i.e. Caparo, in Trinidad.

*Phæthornis guyi*, Lesson.—It was in the depths of the high woods near Moruga, in the Savana Grande district of Trinidad, that I secured this bird, and the discovery was due to its curious harsh notes, which could scarcely be dignified by the term song; these are uttered whilst the birds rest on bushes only a few feet above the ground, and the position assumed is so erect that the beak is in a straight line with the tail-feathers, which point directly downwards.

*Phæthornis longuemareus*, Lesson.—This species was taken in the high woods, in a very shady spot close to a clump of Borassus Palms. Its shrill, weak, grating song was uttered whilst it was on the wing, and was sustained for some minutes. It was so small that it might easily have been mistaken for a large bumble-bee in motion.

*Lophornis ornatus*, Bodd. "Whiskerandos."—The only two I shot were obtained at Tacarigua, in Trinidad, and I never saw them elsewhere.

*Florisuga mellivora*, Linn. "The Jacobin."—This lovely bird I never met with in Trinidad, but whilst I was staying with

my kind friends Capt. M. Short and Mr. Trochilus Tucker in Tobago, I found it to be fairly common on the windward side of the island. It will not be out of place to mention that the last-named gentleman's father collected Humming-birds for the late Mr. Gould nearly thirty years ago, and, visiting him one morning by appointment in London, mentioned that he had received news by cable of the birth of another son. "Call him Trochilus," said Gould; and it was so arranged when Mr. Tucker returned to Iére! The young birds have a barred throat and dirty white breast, as immature plumage.

*Glaucis hirsuta*, Gm. "Rachette."—This bird was very partial to the flowers of the balisiers which abound on the banks of streams and damp shady places. I took it both at Claxton's Bay in Trinidad and Tobago.

*Agyrtria niveipectus*, Cab. and Heine. "Gorge blanc."—Found both in the Caparo Valley and Savana Grande districts of Trinidad, but I did not observe it in Tobago.

*Amazilia tobaci*, Gm.—It was not until I visited Tobago that I secured skins of this bird; the first one I shot was on my way to Robinson Crusoe's cave. Though I visited this historic cave in a vain attempt to secure the Fish-eating Bat, *Noctilio leporinus*, Linn., it was a sad awakening to view the reality, after the boyish remembrances I retained of Defoe's charming romance. In a few years there will no cave at all, and now the action of the waves—for it is on the windward side of the island—has reduced it to a mere cupboard of stalactitic limestone, in which you cannot stand upright, and the roof is so cracked that it looked as if the report of a gun might bring the whole thing down about one's ears.

*Campylopterus ensipennis*, Sw.—In size this was the largest of all my West Indian Hummers. I saw it nowhere, save on the Richmond Estate in Tobago, and then always on the wing.

*Bellona ornata*, Gould.—Though the male of this bird was very common in St. Vincent, I still had the greatest difficulty in obtaining a female, and when I did I also obtained the nest and eggs of the bird. The nest was built in the mouth of a small cave high up in the Wallilabou Valley, where I stayed with my hospitable friends, the MacDonalds, for the purpose of collecting.

*Eulampis holosericeus*, Linn.—I found this bird hard to obtain, and during a fortnight's collecting only took two specimens.

*Eulampis jugularis*, Linn.—Very partial to the flowers of the "bois immortel" trees, which have been introduced into St. Vincent for shade purposes.

The four following birds, or, as they are locally called, Honey-suckers, may almost be termed the first cousins to the *Trochilidae* :—

*Cæreba cærulea*, Linn.—In the Savana Grande district of Trinidad only.

*Cæreba cyanea*, Linn.—Very common in Tobago at the flowers of the "bois immortel."

*Chlorophanes spiza*, Linn.—From Trinidad; collected in Savana Grande, at Moruga.

*Certhiola atrata*, Linn.—This bird, which is peculiar to St. Vincent, was observed in extraordinary abundance at "immortel" flowers, a dozen on one tree being no rare occurrence.

*Aramides cajanea*, P. L. Müll.—This waterfowl fell a victim to one of the traps I had set for Water Rats, *Nectomys palmipes*, baited with Indian corn.

*Momotus swainsoni*, Scl.—Shot in the high woods near Moruga, Trinidad.

*Icterus xanthornus*, Gm. "Corn Bird."—I shot one of these in Trinidad, but found it nesting in Tobago, where a colony had their pendulous nests in a large cotton tree.

*Trogon meridionalis*, Sw.—I obtained a pair of these birds in the Savana Grande district.

*Rhamphastos vitellinus*, Licht.—I secured one out of a flock, which fluttered down to the ground calling loudly for help, bringing up its companions, whose yells and screams reminded me of the parrot-house at the Zoo.

*Nyctibius jamaicensis*, Gm. "Poor me One" Bird.—The cry of this large Nightjar used to be attributed to a Sloth which is found in Trinidad (*Choloepus didactylus*). It is a long-drawn chromatic whistle, with clear intervals between each note. This bird is far from common.

*Pipra auricapilla*, Briss. "Louis d'or."—This beautiful little bird was only met with on one occasion near Moruga, Trinidad.

*Tanagra sclateri*, Berleps.—Mention of this species must not

be omitted, as it generally formed one of the crowd which frequented the flowers of the "immortel." It was specially abundant in Tobago.

*Mimus gilvus*, Vieill. "St. Vincent Nightingale."—The local name of this bird expresses the common opinion of its vocal powers; occasionally I heard it sing really well, but on the whole I think it is a lazy songster.

*Ortalis ruficauda*, Jard. "The Cockrico."—This bird I only met in Tobago; it is much sought after for the table, and is fast retiring before "civilization." Its flesh is somewhat similar to a Pheasant. I found it very wary, and its note is fairly described by its local name, many times repeated, which is to be heard at a great distance.

*Momotus swainsoni*, Scl. "King of the Woods."—Only procured in Tobago.

*Turdus gymnophthalmus*, Cab.—Plentiful in both Trinidad and Tobago, but more wild in the latter island, where it is shot for the table.

*Galbula ruficauda*, Cuv. "The Jacomar."—This lovely bird is one of the most expert flycatchers I ever observed. A pair were seen digging their nesting site in a bank of earth in Savana Grande.

*Actitis macularia*, Linn. "Sandpiper."—Common on the shores of Trinidad and Tobago.

*Myiadectes sibilans*, Lawr. "The Souffrière Bird."—So retiring is this bird, which is found round the twin craters of St. Vincent, that I could obtain no description even of its colours. Not until an altitude of 4000 ft. is attained is its exquisite and varied flute-like whistle heard. It is so marvellously shy that I had to make two ascents before I obtained a specimen; it seemed almost to possess ventriloquistic powers.

In conclusion, I desire to express my indebtedness to Mr. Ernst Hartert for the identification of the species.

## CURIOS NESTS AND NESTING SITES OBSERVED NEAR THETFORD.

By W. G. CLARKE.

THE nidification of our English-breeding birds must always have an especial interest to ornithologists, an interest which is accentuated by the fact that the abnormal is never wanting. Almost all the charm of searching for the domiciles of our feathered friends would be lost, if it were not for the constant element of uncertainty as to where the nests will be placed, and the consequent delight at finding them in some unique position. This variability is far less marked in nests than in nesting sites, therefore my notes upon curious nests are very brief.

A nest which was in my possession until quite recently was found in a hawthorn hedge at Lakenheath, Suffolk. A Wren had built its nest about three feet from the ground, and upon the dome of this a Linnet had also built, the two nests being firmly interwoven. Both birds were sitting upon their eggs at the same time, and safely reared their respective broods. Another twin-nest even more remarkable was found this year in the hamlet of Snarehill, Thetford. The nest of a Blackbird was situated in a wild apple tree adjacent to a convenient crotch. A Chaffinch thought this crotch a desirable site for a nest, and there built it, weaving its side into the loose bents surrounding the Blackbird's nest. Records of communistic nests are not very abundant, but instances occur yearly in this locality of joint nests of the Common and Red-legged Partridge.

In the last week of May in this year, a friend of mine found eggs of the Pheasant and Red-legged Partridge in the same nest, a few miles from Thetford. Mr. F. Norgate found a nest on Santon Warren which contained eight Teal's, one Duck's, and several Pheasant's eggs. A nest of the Song Thrush which I saw at Santon Downham in May, 1893, contained grass in the interior three inches in height, which seemed to have sprung from grass

seeds in the mud with which the interior of the nest was plastered. There was only one egg, of a dull blue colour, with maroon spots on the larger end.

Swallows often build their nests in remarkable situations. Every year their dwellings may be seen in the coprolite sheds belonging to artificial manure works near Thetford, where the smell is indescribable. One's olfactory organs must be affected before realizing what it is; but these Swallows seem to pay no heed, and rear their broods each year in safety. Swallows also build in the shops of the engineering works in this town, threading their way unerringly through the revolving shafting, and quite unmindful of the clang of the machinery. Nests, too, are to be found each year on the joists beneath Aldeby Swing Bridge, near Beccles, continually subject to the rattling and rolling of the trains above them, and the snorting of steamers beneath. In a boat-house at Martham this year, a Swallow's nest was found built in the folds of a sail which had there been stored. I was also struck by the fact in a recent visit to Rievaulx Abbey, Yorkshire, that almost without exception there was a Swallow's nest in each of the pointed arches of the Early English windows. But for queer nooks and crannies in which to place nests, no bird can approach the Blue Titmouse in its choice. It would seem to be the exception rather than the rule to find a nest of this bird where one would expect it. Each year there is a nest in the letter-box of the Ink Factory at Barsham, and for many years a "blue jimmy" used the village postal wall-box at Kilverstone for purposes of nidification. In 1894 a Blue Tit safely reared its brood in a crack about half an inch in width in the axle of one of the staunches on the river Little Ouse, although people in crossing from one side of the river to the other generally used this axle as a hand-rail. At the same time there were eight callow youngsters in a nest built in the crack between two bricks from which the mortar had been weathered away in a wall near Thetford. In the spring of this year a friend found a Blue Tit's nest in a hollow gate-post, and with misdirected zeal split the post down the middle until the nest was reached. In spite of this, the parent bird refused to leave the eggs, which were on the point of being hatched, allowing herself to be lifted off the nest without any sign of fear. A still more curious instance has been published in the

'Transactions of the Norfolk and Norwich Naturalists' Society,' wherein it is recorded that about 1819 a man named Camplin climbed a gibbet in the parish of Wereham, Norfolk, upon which had been executed a person named Bennett, the trial taking place at Thetford. In the head of the skeleton a Blue Tit had built its nest, and the terrified family of nine or ten flew out on being disturbed. Another peculiar instance occurred this year at Stow Bedon Station, as related to me by the station-master. Two nests of the Blue Titmouse were there built in the point-box, one of them containing six and the other two eggs—the nests being built by different birds. Both nests were lined with feathers which the station-master's wife had turned out of a pillow. Despite the fact that the position of the nests was changed each time the points were moved, and that eight or nine persons were often observing this curiosity at one time, the six eggs were safely hatched and the young fledged—the other nest being deserted.

For many years past there has been a Great Tit's nest in a pump in the garden at Great Fakenham Rectory, which is always undisturbed by the owner—an ardent naturalist. In Gallow's Pits, Thetford, criminals were formerly interred after execution by the manorial or episcopal courts which could then enforce the penalty of death; now the pits are used as receptacles for rubbish. Amongst the miscellaneous collection of kettles to be found there, a Robin generally builds its nest year by year. Starlings notoriously nest in queer places. In a railway bridge at Santon, Norfolk, six bricks were missing, three on each side. Of the six holes, five were tenanted this year by Starlings. In the crotch of a beech tree in a plantation at Kilverstone, Norfolk, a piece of oak-bark had become fixed about three feet from the ground. Upon this bark a Nightjar had deposited its two eggs, in preference to the bare earth. A somewhat similar case occurred this year on Peddar's Way, East Wretham. A piece of the outer bark of a pine tree had been blown into the middle of a hawthorn bush, the concave side being uppermost. In this a Blackbird's nest had been built, the rim of the nest being level on either side with the edge of the bark. A short distance away was a big stack of fallen pines—relics of the great gale of 1895. The heart of one of these trees had rotted, and in the cavity thus formed was a Redstart's nest containing three eggs. In 1893 one of these

birds built its nest in a hole from which a brick had been displaced, not a yard from a gate through which hundreds of persons passed weekly, but it was not until the young birds were hatched that the nest was discovered. A few Black-headed Gulls nest yearly at Langmere, about four miles north of Thetford. On a certain Sunday in this year a gentleman found a Coot's nest on this mere close to the shore. On the next Sunday a log had been thrown quite across the Coot's nest, a Black-headed Gull's nest built upon the log, and one egg laid—all in a week. With this I will conclude these bare facts concerning curious nests and nesting sites that have come within my personal knowledge.

## EARTHWORM STUDIES.

BY THE REV. HILDERIC FRIEND.  
Author of 'Flowers and Flower-Lore.'

## IV. A CHECK-LIST OF BRITISH EARTHWORMS.

SOME years ago I drew up a provisional list of the different species of Earthworms which were then known to exist in the British Isles, and published the same in 'The Naturalist' for January, 1893. Since then Rosa's 'Revisione de Lumbricidi,' Beddard's 'Monograph of the Oligochaeta,' Ribaucourt's 'Faune Lombricide de la Suisse,' together with a long series of pamphlets and memoranda, have appeared; in addition to my own special reports on the Earthworm fauna of Ireland, England, Normandy, and other parts. It therefore seems desirable that we should summarize our present knowledge for the guidance of collectors at home and students abroad. In this paper I shall place on record all the species and varieties which have come under observation up till the present time, so that we may see in the first place exactly what British species were known to science in this memorable Jubilee year, and at the same time afford a guide to collectors in the identifying of their captures.

In most cases I have, for the sake of convenience, followed Beddard's 'Monograph,' although I cannot in every instance endorse his conclusions. He has absorbed some good species which I have preferred to keep distinct, but in the present state of our knowledge such little differences are inevitable. Although I have given up the specific use of the term *Dendrobæna*, I believe the day is coming when the large genus *Allolobophora* will be divided into sections, of which *Dendrobæna* will be one. Dr. Ribaucourt, indeed, has submitted a synopsis on these lines, which Rosa and others have also from time to time considered and half adopted.

Our indigenous Earthworms fall under three genera, and number at present twenty-three species, besides a few subspecies

or well-marked varieties. When I first took up the study some years ago it was assumed that the total number of species did not exceed ten. I believe that two or three other species might be certainly added to the list if the localities as yet unsearched were to be examined. Special attention should be given to the Earthworms of Shetland, the Scottish Highlands, the extreme south-west of England, the Scilly and other isles, of all of which we at present know practically nothing.

Some years ago I adopted the plan of denoting the girdle-segments, and those carrying the glands known as *tubercula pubertatis* by means of a fraction. Thus  $\frac{30-36}{31-35}$  would denote that the species had a girdle in the adult which extended from the 30th to the 36th segment, while the 31st to the 35th segments were marked by tubercula. Sometimes, however, the tubercula are on alternate segments, when they are denoted by the symbol  $\frac{30-36}{31: 33: 35}$ . I have not seen any better method of denoting these important organs, so shall adopt it in the present list. The genus which is still the least satisfactory is *Allurus*. I formerly reported five species, but to-day I reckon three, with one well-marked variety. No new light having been thrown on Dugès' *Amphisbena*, I have dropped it from the list. I omit all aliens known to be imported from abroad, such as the ubiquitous *Perichaeta*.

### I. Genus LUMBRICUS.

Lip or prostomium cutting right through the peristomium, or forming a complete mortise and tenon. Girdle of five or six segments. On the four innermost a band formed by the tubercula pubertatis on the ventral surface. Eight setæ in each segment but the first, arranged in four couples, not in equidistant rows. Male pores on the 15th segment with or without papillæ. Colour dark brown, red, or violaceous, with iridescence. Body cylindrical in front, flattened behind to enable the creature to retain its hold in the burrow when the head is exposed. Slime exuded especially when irritated, but no coloured fluid thrown out from dorsal pores as is the case with many species of *Allobophora*. The species at present known in the British Isles, with some of the localities, are as follows:—

1. *Lumbricus herculeus*, Savigny. <sup>32-37</sup> <sub>33-36</sub>. Generally distributed. Records wanted for islands all round the coasts of England, Scotland, and Ireland, and some few counties of England.

2. *L. papillosus*, Friend. <sup>33-37</sup> <sub>34-37</sub>. First described by me in Proc. Roy. Irish Ac. (3), ii. p. 453. Hitherto found only in Ireland. A well-marked species, but very similar to, and easily mistaken for, the foregoing.

3. *L. festivus*, Savigny. <sup>34-39</sup> <sub>35-38</sub>. Though first described in 1826, it was for nearly sixty years lost to view. I rediscovered it in 1890, and named it *L. rubescens*. This year it has been found again in France also. It is widely distributed, my own records including Sussex, Kent, Middlesex, Norfolk, Gloucestershire, Yorkshire, Lanarkshire, Down, Dublin, and other counties.

4. *L. rubellus*, Hoffmeister. <sup>27-32</sup> <sub>28-31</sub>. Widely distributed. This species is fortunately free from the bewildering array of synonyms attaching to some others.

5. *L. castaneus*, Savigny. <sup>28-33</sup> <sub>29-33</sub>. Mr. Beddard remarks truly that this species, like the last, has almost invisible male pores, owing to the absence of a glandular swelling, such as characterizes so many *Lumbricidae*. The prostomium has a transverse furrow. It is apparently only to be distinguished from *L. rubellus* by the different position of the clitellum and the tubercula pubertatis. I should add, "and, as a rule, by the marked difference in their relative sizes, and the tendency of this species to crawl backwards." By an error in the ciphers, Beddard's 'Monograph' makes *castaneus* four times as long as *rubellus* (500 mm. to 120), whereas it should be half the length (50 or 60 mm. to 120); the former being ordinarily two or three inches long, and the latter (*rubellus*) about five.

I may here point out an interesting feature in connection with this genus. In 1896 Dr. Ribaucourt described a new Swiss species (*L. studeri*), specimens of which reached me from Normandy just after the name had been adopted. This species filled up a gap in the chart which he had previously drawn up, and enabled us to set forth the regular succession of segments bearing the clitellum. The plan now stands as follows:—

1 <i>Rubellus</i>	27	28	29	30	31	32	
2 <i>Castaneus</i>		28	29	30	31	32	33
3 <i>Melibæus</i>			29	30	31	32	33
[4 <i>Tyrtæus</i>				30	31	32	33 34 35]
5 <i>Studeri</i>					31	32	33 34 35 36 37
6 <i>Herculeus</i>						32	33 34 35 36 37
7 <i>Papillosus</i>						33	34 35 36 37 (38)
8 <i>Festivus</i>						34	35 36 37 38 39

In October, 1893, I remarked ('Naturalist,' p. 296) that *L. tyrtæus* was probably the same as *Allobophora profuga*, and now Dr. Ribaucourt supports my suspicion, though he does not amalgamate the two. The accompanying table or chart gives a bird's-eye view of the British species of the genus which will be helpful to collectors:—

#### A TABULAR VIEW OF THE BRITISH LUMBRICI.

LUMBRICUS.	SEGMENTS OCCUPIED BY			AVERAGE.		PAPILLÆ.	
	Girdle	Band.	First Dorsal Pore.	Length.	No of Segments.	Male Pore.	Elsewhere.
1. <i>herculeus</i> , Sav., 1826 .....	32-37	33-36	8/9	5 in.	150-200	15	26
2. <i>papillosus</i> , Friend, 1892 .....	33-37	34-37	9/10	4 in.	130-150	15	34, 36
<i>festivus</i> , Sav. = 3. <i>rubescens</i> , Friend, 1890 .....	34-39	35-38	5/6	4 in.	100-130	15	28
4. <i>rubellus</i> , Hoffmeister, 1845 .....	27-32	28-31	7/8	3 in.	100-120	0	0
<i>castaneus</i> , Sav. = 5. <i>purpureus</i> , Eisen, 1870 .....	28-33	29-32	6/7	2 in.	80-100	0	10

#### II. Genus ALLOBOPHORA.

The members of this genus fall more or less naturally into groups, of which the *Dendrobæna* is the best defined. As a whole the species of this genus may be known by the lip being only partially dovetailed into the 1st segment. There is a curious exception to this rule in *A. eiseni*, which has the head arrange-

ment of a true *Lumbricus*. There is a greater range in the number of girdle-segments than is found in the former genus. While in the British Lumbrici they number six, with the single exception of *L. papillosus*, in this genus they cover from four to ten segments. The tubercula are also more variable, being (1) absent, (2) on alternate segments, or (3) on a variable number of segments, either as papillæ or in the form of a band on the ventral surface of the clitellum. The male pores are on segment 15, and with or without papillæ. There are eight setæ on each segment, sometimes geminate as in *Lumbricus*, at other times more or less irregularly disposed. They are usually cylindrical throughout, and frequently exude a turbid fluid which is sometimes very pungent. The colour range is not limited as in *Lumbricus*. It varies from blue (in *A. profuga*) to green, ruddy brown, flesh, clay-colour, and alternate bands as in the Brandling. This is by far the largest genus, and has almost a world-wide distribution. The species, subspecies, and varieties known to science now number nearly one hundred. The following are known in the British Isles:—

6. *Allolobophora terrestris*, Sav. = *longa*, Ude.  $\frac{28-35}{33-34}$ . Very widely distributed, and often confused with *L. herculeus*, though easily distinguished therefrom. A pale variety (*lactea*) often found. The causes of variation have not yet been fully investigated.

7. *A. profuga*, Rosa.  $\frac{30-35}{31-34}$ . Well-marked species; usually steel-blue, with yellow tail and light-coloured girdle. Found in Ireland, North Wales, and several English counties.

8. *A. turgida*, Eisen.  $\frac{28-34}{31:33}$ . Widely distributed, and formerly confused with the next, with which also Mr. Beddard wrongly associates it under the name *calignosa*. I admit that *turgida* and *calignosa* are the same, but *trapezoides* is quite distinct. Ribau-court has gone carefully into the whole matter.

9. *A. trapezoides*, Dugès.  $\frac{27-34}{31-33}$ . Note that in one case the papillæ are on two alternate segments (31 : 33), while in the other they cover three consecutive segments (31—33). There are other differences which at once appear when a good series is under examination. Beddard's remark that Michaelsen found an intermediate form seems to me to suggest the question of hybridity—a subject which I have discussed in 'The Naturalist' (October, 1892).

10. *A. rosea*, Savigny.  $\frac{26-32}{29-31}$ . Widely distributed. The fluid discharged on irritation leaves a white sediment behind, which seems to be a form of calcium, the study of which might throw some new light on the use of the calciferous glands.

11. *A. chlorotica*, Savigny.  $\frac{29-37}{31:33:35}$ . Very variable and ubiquitous. I place here for the present the worm I formerly described as *A. cambrica*. Until we know more of the limits and extent of variation, and can draw a firmer line between species and subspecies, form and variety, it is better not to multiply terms. Several subspecies and varieties have been named by Rosa, Ribaucourt, and others, and our British forms would well repay careful examination.

12. *A. georgii*, Michaelsen.  $\frac{29-35}{31-33}$ . Tubercula as in *trapezoides*, which it nearly approaches. I have received it from Clonmore, Co. Clare, Ireland, which is thus far its only decided British habitat.

13. *A. fætida*, Savigny.  $\frac{27-32}{28-30}$ . The well-known Brandling of the angler; at once recognized in England by its characteristic colour-bands. On the Continent more than one closely-allied form occurs. The species which comes nearest to it in our British fauna is the next.

14. *A. subrubicunda*, Eisen.  $\frac{26-32}{28-30}$ . Appears to be generally distributed in the British Isles, and liable to great variation, the forms of which (and their causes) merit special investigation.

15. *A. hibernica*, Friend.  $\frac{27-33}{30-31}$ . Probably the same as *A. veneta*, Rosa. At present known from Dublin and Louth in Ireland, but not found in England. (Proc. Royal Irish Acad. 1893, p. 402.)

16. *A. mammalis*, Savigny.  $\frac{30-36}{33-34}$ . I have found this worm in many parts of the country, and recorded it under Rosa's name *A. celtica*.

17. *A. arborea*, Eisen.  $\frac{27-31}{29-30}$ . Should not be placed under *subrubicunda*, as it is at least a good subspecies. Collected in or received from different parts of England, Ireland, and Wales.

18. *A. eiseni*, Levinsen.  $\frac{24-32}{0}$ . A pretty anomaly, owing to its having the cephalization of a true *Lumbricus*—a connecting link between the two genera.

19. *A. boeckii*, Eisen.  $\frac{29-33}{31-33}$ . Only two authentic records, earlier records belonging to *subrubicunda*. Apparently a boreal

species, but well marked. Much has been written on it by Rosa, Eisen, Ribaucourt, Beddard, and myself. It is found in Yorkshire and Scotland, and should be sought for elsewhere among old decaying timber or fallen trees in parks, woods, and forests.

20. *A. constricta*, Rosa.  $\frac{26-31}{0}$ . Another of the dendrobænic group. I have found it in Sussex, and this year have received it from the county of Antrim, together with a new variety, the description of which I append.

#### NEW VARIETY OF EARTHWORM.

20a. *Allolobophora constricta*, Rosa, var. *geminata*, Friend. Length in alcohol,  $1\frac{1}{4}$  in. or 32 mm. First dorsal pore,  $\frac{5}{6}$ . Colour like the dendrobænic group generally. Prostomium pale, scarcely at all cutting into the peristomium. Male pore not seated on papillæ; no swelling on segment 16. Girdle extending over seven segments (25—31). No *tubercula pubertatis*. Total number of segments 60, those behind the girdle triannulate. Setæ geminate or in pairs, as in the *Lumbricus* type. Found by Dr. Trumbull in wood, Co. Antrim, Ireland, 1897.

#### III. Genus ALLURUS.

This small group of worms is semi-aquatic, and may be readily distinguished by the square tail and the position of the male pores on segment 13 instead of 15, as in the two preceding genera. I reckon three British species and one well-marked variety.

21. *Allurus tetraedrus*, Savigny.  $\frac{22-26}{23-26}$ . Very widely distributed in the British Isles.

21a. *A. tetraedrus* var. *flavus*. A beautiful variety found in a stream near Carlisle, and one specimen in Calverley Woods, Yorkshire. Formerly called *A. flavus*, Friend.

22. *A. tetragonurus*, Friend.  $\frac{18-23}{19-21}$ . Described by me in 'Science Gossip,' Nov. 1892, p. 243, from a specimen from Bangor, North Wales. Doubtfully referred to *Tetragonurus pupa*, Eisen. A well-marked worm, but more specimens are desired.

23. *A. macrurus*, Friend.  $\frac{15-22}{20-21}$ . Found hitherto only in Dublin. The characters of this species are indisputable, but here again more material is wanted.

## NOTES FROM MID-HANTS:

SPRING AND SUMMER, 1897.

BY G. W. SMITH.

SINCE sending my notes for the winter of 1896 I have learnt from Mr. Chalkley that a Gannet was shot at East Tisted on December 12th, and a Peregrine Falcon at Whitchurch on the 5th of that month.

## JANUARY.

In water-meads (Winchester) this month shows very little change in bird-life from the last. The Common Gulls still remain with us, but *L. argentatus* has not paid a visit during the whole month. Mr. Kelsall, writing to me of sea-birds in the New Forest, says:—"There is a large pond in my parish about four miles from the sea which the Gulls visit every day in summer—Herring Gulls, I think. The forest people say that the Cormorants fly daily to Salisbury! They often pass over us. Our Gulls are not seen here in winter; perhaps they go further afield when they have no eggs or young. I find notes in my diary as follows:—March 13th, 1895; Gulls begin to pass over about this date; and March 15th, 1896, Gulls passing over."

On the 6th a Bittern, *B. stellaris*, was shot at Avington, and sent to Mr. Chalkley to be preserved. By the 29th Pied Wagtails were as numerous as ever in water-meads, but the Grey Wagtails were reduced to a few pairs. Reed Buntings were still common quite close to the town. On the 30th I saw two Dabchicks, *P. fluviatilis*, on the Itchen close to the town, for the first time during the winter. They were extremely wary, and dived down, to appear several yards off in an inconspicuous position by the bank, at the slightest disturbance.

The frost gave way on this date.

## FEBRUARY.

On the 4th the Common Gulls left suddenly and for good, save for one short visit, which lasted only a few hours, on the morning of the 25th, when five or six were wheeling at a great height above water-meads. The Pied Wagtails are diminished in numbers; the Grey Wagtails are only occasionally seen during the middle of the month. On the 9th there were seven or eight Dabchicks on the Itchen near the College and another party further down by Shawford. On the 20th the first inward migration of Peewits began, a company of fifty or so flying west in a long line on that date, and another on the 25th. On the 2nd a Brent Goose was shot at Medstead, and on the 15th I saw three Geese, which I suspected to be Brent, flying at a considerable height over water-meads. On the 18th a Great Spotted Wood-pecker was shot at Sparsholt and sent to Mr. Chalkley to be set up. On the 23rd the Rooks first began to collect twigs for repairing their nests; they were very quarrelsome, and one bird was killed in a scuffle and fell down dying into meads. On the 24th I saw a company of about two hundred Wood Pigeons in a ploughed field bordering a wood at Whitchurch. Both species of Wagtail decreased steadily in numbers as the month progressed; during the whole winter neither species has been so numerous as in former years. Mr. Kelsall writes from the New Forest, "A pair of Wheatears, Feb. 27th." This is the earliest record I know.

## MARCH.

On the 1st a few Common Gulls came with a strong south wind to stay for a few hours in the morning, on the 4th and 6th; one Gull stayed through the greater part of the morning. On the 22nd Peewits were in abundance on Twyford Downs, probably with nests; in fact, on the 21st, several clutches were found in a ploughed field to the north of this spot. It is very curious how persistently this bird is persecuted and with what persistence it propagates its kind so successfully. On the 22nd I saw the Wheatear, male, for the first time this year, in water-meads. On the 24th a solitary Herring Gull was battling with a strong south wind above St. Catherine's Hill. The Dabchicks leave us about now, and are never seen so high up the river during the rest of the year. This fact applies to all our winter visitants in the

upper water-meads; they seem to come nearer the town during winter, and to distribute themselves more widely for the breeding season. The Reed Buntings, for instance, at the end of this month, have moved away to their breeding haunts a few miles down the river. Thus we have such birds as the Wagtails, Buntings, Dabchicks, &c., performing regular migrations on a small scale.

On the 25th a Thrush's nest was found with three eggs, and three Blackbirds' nests had eggs in two cases and young birds in the third. All the nests were in evergreens. The first Swallow arrived in water-meads on the afternoon of the 27th. On the 29th Mr. Chalkley received a Ring Ouzel from Avington, and on the 30th a specimen of the same bird from Highbridge, four or five miles on the opposite side of the town.

#### APRIL.

By the 2nd Swallows were numerous in water-meads, and on that date the first Sand Martin arrived. On the 3rd a stormy wind was blowing from the east, and two Herring Gulls payed a visit in the morning. The Jackdaws began their nests on this date in the College chapel tower. On the 4th a young Thrush of the year, fully developed except in the tail-feathers was seen, and the first Whitethroat was reported past St. Cross.

In Kent (Beckenham) the Swallows and Sand Martins arrived on the 19th; and on the 23rd I was fortunate in seeing the first birds of the season arrive in North Staffordshire.

Mr. Kelsall, from the New Forest, reports, "Chiffchaff, 1st; Cuckoo, 14th (heard in Kent first on 20th); Nightingale, 18th (in Kent 19th); Willow Wren, 20th." He says, however, that it is uncertain whether these were first arrivals, as he was away for "the first rush."

On the 30th eggs of the Great Tit were taken at Crabbe Wood. Pied Wagtails with their congeners have deserted the water-meads near the town by now, save for a few pairs of the first species, preparatory to spending the breeding season further down the river. They usually return about the middle of November (see Zool. 1897, p. 34).

## MAY.

On the 1st I saw the first Swift at Winton, and Mr. Nutt reported Meadow Pipits in water-meads. On the 3rd Swifts positively swarmed near St. Catherine's Hill, flying low, and uttering their cries. Up to the middle of this month, which has been bitterly cold, Swallows, Swifts, and Martins must have been suffering from want of food. I have never seen such numbers of them before flying, vainly for the most part, over the Itchen near the town.

On the 4th I found a clutch of six Wheatear's eggs, hard-set, on a warren (Longwood) four miles east of the town. This is an early date. I saw two Stone Curlews also there on this date, and Mr. Nutt reported these birds at Farley Mount, nort-east of Winton. On the 5th I saw Willow Wrens at Compton Gorse, and heard what was very likely a Lesser Spotted Woodpecker. This little copse abounds in Nightingales, which were keeping up a lovely chorus when I visited it on the 8th. On the 10th Mr. Kelsall reports, "Wood Wren and Tree Pipit; Nightjar and Shrike reported." On this date Reed Buntings had eggs in water-meads (hatched on 12th), and I found a clutch of five Moorhen's eggs at Fishers Pond. I picked up a young Coot of the year on the bank, which seemed quite helpless, and had evidently been neglected by its parents. This bird breeds in fair numbers every year there, and I have March 15th, 1890, as the earliest record of its laying. It migrates partially to the coast in winter.

In the middle of the month a pair of Nuthatches, which have built in the same tree in the college meads for three years, had eggs. On the 12th a Stone Curlew's egg was brought me from a boy who had picked it up in "a hollow" near Chilcombe, three miles from the town. He said it was the only one, but how far he may be trusted is uncertain. It was quite hard-set. This egg is rarely found, though the birds breed here every year in small numbers. Two eggs were taken last year on May 6th, after a most persevering hunt, by Mr. Ensor. On this date (12th) a Carrion Crow's nest was found at Oliver's Battery, a mile from the town, with young birds in it. On the 15th a Willow Wren's nest was found with six eggs in it, and on this date five Hawfinch's eggs were taken in a wood two miles from the town. At

present the records for this bird in the neighbourhood are—“Nested at Alresford, 1891; seen near College, February, 1892; shot at Otterbourne, 1892, and at Hursley, 1893.” On the 17th Red-legged Partridge’s eggs were taken, and on this date Mr. Chalkley received two Tufted Ducks from Alresford, and a Hobby from Northwood. The Ducks have only been known to breed recently at Alresford, a pair first nesting there in 1890. A Wryneck was shot during this month near here, not a very common bird with us. On the 18th Chiffchaff’s eggs were found at St. Cross.

I have been on the look-out during the past few months for *L. ridibundus*, which often pays a visit in fair-sized flocks to water-meads, but I have not been successful. It has been suspected that it occurs in fair numbers in company with *L. canus* during the winter, but I am inclined to disbelieve this. I may here mention that although *L. canus* was very numerous during the winter months, the date of its departure was extremely early as compared with other years. Mr. Sutton Davies gives the beginning of May as the average date for its departure to the coast. On the 31st a Whinchat’s nest with three eggs in it was brought to me from a boy who had found it “near water” past St. Cross. At the beginning of this month an interesting variety of the Blackbird’s egg was found; ground colour pale blue, with a light brown continuous patch at the thick end, as if the egg had been “singed” there. Out of five eggs three were normal, and two presented the variety described.

#### JUNE.

On the 1st Lesser Whitethroat’s eggs were found, and on the 4th Reed Warbler’s. On the 14th Turtle Dove’s eggs were fresh; May 13th is the earliest date I know for the eggs of this species near here (1893). There were young birds in a Garden Warbler’s nest in the town on the 14th. Very little ornithological work has been done this month owing to general business.

#### JULY.

On the 11th I saw a mature Peewit in water-meads with the wings a dark brown colour all over. Otherwise the bird was typical, and I had no difficulty in recognizing it, as it flew for

some time over my head, and settled only a few yards off. I am inclined to think that it was in ill-health. On the 13th I saw about a dozen Peewits in water-meads; this is very early for these birds to be assembling, but no doubt it is not universal. On the 16th a large flock of Peewits, numbering sixty or seventy, were reported flying east across the valley, and there are several birds collected in water-meads. In the middle of the month a Common Buzzard was shot near here. This is the only bird of interest Mr. Chalkley has received during close season.

## OBITUARY.

## REV. ANDREW MATTHEWS.

WE regret to announce the death of this well-known British naturalist, who died, at the age of eighty-two, on September 14th last, at Gumley, of which he had been rector for forty-four years. He was born on June 18th, 1815, the day of Waterloo, and by a coincidence died on an anniversary of the death of the Duke of Wellington. Mr. Matthews was more widely known as an entomologist than an ornithologist, and may be said to have inherited his zoological tastes, as his father was also a naturalist and a contemporary of Dale, Stevens, Curtis, and other well-known men of that period. In 1849, in conjunction with his brother Henry Matthews, he published 'The History of the Birds of Oxfordshire and its Neighbourhood.' We learn from his son (Dr. J. C. S. Matthews) that he leaves a collection of British Birds containing about 450 specimens, chiefly obtained by himself and his father in Oxfordshire and the New Forest. This collection also comprises the first Ibis recorded in this country, shot in Norfolk 200 years ago and noted by Pennant, and two specimens of the Avocet, likewise mentioned by that old author.

As an entomologist he will be best remembered as an authority on the minute beetles, *Trichopterygidae*, of which he described many species, and, in 1872, published his well-known 'Trichopterygia illustrata,' of which in his eightieth year he completed a second volume which is now in the publisher's hands. He was also the contributor on this group to Godman and Salvin's 'Biologia Centrali-Americana,' and joint author with the Rev. W. W. Fowler of a Catalogue of British Coleoptera in 1883. When we add that Mr. Matthews was also a successful floriculturist, especially with regard to Pelargoniums and Picotees, we take leave of a long, happy, and useful life passed in the culture and leisure of a rural rectory.

Mr. Matthews was an old contributor to these pages; we notice his name as far back as 1847.

## NOTES AND QUERIES.

## MAMMALIA.

## INSECTIVORA.

**Lesser Shrew in Devon.**—Early in September my friend Mr. Frank Brownword sent me an adult Lesser Shrew, *Sorex minutus*, which had been brought into his house at Shebbear, North Devon, by a cat.—CHAS. OLDHAM (Sale).

## AVE S.

**Montagu's Harrier breeding in Ireland.**—On August 24th last I received a letter from my cousin in Co. Kerry enclosing in the flesh what I identified as a young female Montagu's Harrier. He had shot it on Aug. 20th, and writes:—"I have seen six birds of this kind (four young and two old) constantly about in a rocky ravine near here, and the one I enclose is a young bird. . . . The old hawks make a strange clucking noise, and the young a kind of whistling scream." I have skinned the bird, and Dr. Bowdler Sharpe, on inspection, kindly confirmed my identification. The exact spot where the specimen was killed has been given me, but I refrain from disclosing it, in case any of the birds should nest there again next year. According to Mr. Howard Saunders's 'Manual of British Birds,' *Circus cineraceus* has only occurred three times in Ireland, and has never before been reported as having nested; so that the above facts seem well worth recording.—JOHN H. TEESDALE (St. Margaret's, West Dulwich, S.E.).

**The Eggs of the Roseate Tern.**—With reference to my remarks on the nesting of the Roseate Tern, *Sterna dougalli*, in the British Isles, which appeared in the April number of 'The Zoologist' (p. 165), it will be remembered that I therein emphatically stated that their eggs were easily distinguishable from those of allied species, notwithstanding the late Mr. Henry Seebohm's statement to the contrary in his recent work on Eggs of British Birds, and I will now endeavour to describe their general character. I was under the impression, until quite recently, that these notes would be original, but I find that the late (?) Rev. J. C. Atkinson, in his book on 'British Birds, their Eggs and Nests,' published in 1861, says: "Closer observation only has distinguished between their eggs and those of their more numerous associates." This is the fact, and an experienced eye can

readily distinguish the difference, I should say much more easily than between Carrion Crows' and Rooks' eggs, or eggs of other closely allied species. Like most others, they vary among themselves. The Roseates', for instance, in the density of the creamy yellow ground colour, some being very pale, others of a *buff* stone-colour. The markings generally consist of small speckles of reddish brown with small smoky grey underlying spots, distributed more or less all over the shell; others are marked with larger spots and occasionally blotches of a deep reddish brown, and sometimes there is a trace of the markings forming a zone round the thick end. Never, as in the case of Arctic and Common Terns' eggs, does the ground colour consist of a dark stone-colour, brown, bluish, green, dull green, or ashy grey, and they have a common characteristic different to those of the other species mentioned; while the eggs of the Roseate Tern are generally more elongated than those of the Common and Arctic species. As a rule the clutch consists of two eggs only, very rarely are there three.—E. G. POTTER (14, Bootham Crescent, York).

**Little Gull and Red-necked Phalarope in Sussex.**—On Aug. 11th last I saw shot, at the mouth of Rye Harbour, Sussex, a very fine immature male specimen of the Little Gull, *Larus minutus*. It was on the sands in company with a Common Tern; the weight was  $4\frac{1}{2}$  oz. On referring to 'The Zoologist' for the last seven or eight years, I was unable to find any recorded so early in the autumn. The bird is now in my possession. On Sept. 13th last a friend and myself obtained, in the Channel at Rye Harbour, two immature Red-necked Phalaropes, *Phalaropus hyperboreus*, both females, one weighing 1 oz., the other just over that weight. The birds have been jointly identified with Mr. Bristow, of St. Leonards.—E. P. OVERTON (166, Mount Pleasant Road, Hastings).

**Common Swift roosting in Tree.**—Last evening (Sept. 2nd), at seven o'clock, I was near the top of Stepney Hill, Scarborough, and saw two Swifts, *Cypselus apus*, flying near some isolated ash trees by the roadside. Presently one of the birds flew into a tree, amongst the smaller lateral branches, and as I thought to take flies from the leaves. After repeating this action the bird, to my great surprise, clung to a pendant branchlet, amongst its leaves, and there hung suspended vertically, its long wings drooping below the tail, at first in horseshoe form, and then afterwards brought together. The bird hung suspended at about twenty feet from the ground whilst I watched below for a quarter of an hour, till darkness and rain, which was falling freely, sent me away. I left the bird there hanging motionless, quite indifferent to the rain and breeze, which caused it continuously to sway backwards and forwards like a suspended scarecrow. The companion bird approached, and had a look at the other two or three

times, and seemed to endeavour to settle on the same twig, but it did not do so, and had disappeared when I left. The incident was a great surprise to me, as I had never heard that the Swift was in the habit of perching, even occasionally, much less settling down for the night in such a place and position—not really *perched*, but vertically suspended like a great hawk-moth. The Swifts have not all left here. I saw about a dozen flying over the main street this morning.—W. GYNGELL (Scarborough).

**Common Roller in Sussex.**—I have received in the flesh, obtained on Sept. 24th at Catsfield, near Battle, Sussex, an adult female Roller, *Coracias garrulus*; weight, 5 oz.; contents of gizzard, fragments of *Geotrupes*. It had been seen for several days by the keeper who shot it, and who considered it a kind of "Galley-bird," which is the local name for the Green Woodpecker. Markwich, who lived at Catsfield, recorded, in the 'Transactions' of the Linnean Society, one shot near Crowhurst Church on Sept. 22nd, 1790, almost the same date. Borrer, in his 'Birds of Sussex,' records it last in 1870.—G. W. BRADSHAW (Hastings).

**Survival of the Kingfisher.**—I was interested in reading Mr. Farman's account of the rarity of the Kingfisher in the Norfolk Fens ('Zoologist' for August, p. 354). Few matters ornithological have pleased me more in recent years than the abundance of the species, according to my experience. In this neighbourhood, within seventeen miles of London, the bird is common. Wherever I fish my experience is the same. Near Dulverton, where one constantly sees them on the Exe and Barle, there is a fish-hatching establishment, and, commenting one day on the traps set for the unfortunate birds, the keeper told me he had caught as many as thirty in a season. Near Malvern there is another similar establishment, and there I was told as many as sixty had been killed in a year. As the locality is far from suited to the habits of the species, I asked the keeper whether he supposed they had been attracted from a distance. His reply was that in his opinion they all came from the immediate neighbourhood—that the bird was really very common, but seldom seen on account of its retiring habits. In different parts of Herefordshire I generally see one or two when out fishing. My experience has been the same in other localities. There have been recent references also in the newspapers to the supposed scarcity of the Kingfisher. My own hope and belief is that, although such scarcity may exist here and there, the species as a species is widespread and abundant.

I do not know whether Canon Ingram would consider that what happened in the "fifties" came under the description of "modern history," as used by him in his note about the Wood Pigeons;\* but numbers must remember, as I do, the Rooks that in 1854 and 1855—how much later I

\* *Ante*, p. 383.

*Zool. 4th ser. vol. I., October, 1897.*

know not—built in the tree that stands at the corner of Wood Street, Cheapside.—T. VAUGHAN ROBERTS (Verulam House, Watford).

**Habits of the Lesser Spotted Woodpecker.**—Subsequently to a brief sojourn on Lundy Island during May of the present year, I had the pleasure of spending a few days at Clovelly, where I was favoured with excellent opportunities for watching some of the habits of *Dendrocopos minor*, a little bird whose life-history, by reason of its rarity and exceeding shyness, does not readily lend itself to close examination. On three or four consecutive mornings I found the male bird—the female, doubtless, was busy with the cares of incubation—haunting the topmost branches of a patriarchal elm immediately in front of The Court, and even if it was not in my mind on first coming out of doors, my attention was sure to be speedily arrested by its curious and far-reaching “krark-rk-rk-rk-rk-rk,” which sound I had little difficulty in establishing to my own personal satisfaction was caused by the astonishingly rapid vibration of the bird’s beak against the limbs of the tree. I believe this is the generally accepted explanation of one of the most peculiar sounds in nature. Nevertheless, the motion of the bill was so rapid as to be virtually indiscernible to the eye, even with the aid of field-glasses. The noise produced, syllabled as above, somewhat long drawn out, and with just the suspicion of a tremolo when heard at a distance, has been likened to various sounds; but it struck me—ambushed as I was close by—that it resembled more than anything else that caused by a cumbrous branch, partially detached from the main stem, gradually swaying to and fro with each extra heavy gust of wind. What, however, provided me with matter for still more earnest reflection was the way in which the little bird frequently gathered its food. Never stationary for long together, time after time it would take insects from under the leaves after the manner of the *Phylloscopi*. Occasionally it would vary this procedure by darting out and capturing an insect on the wing, in this respect reminding me forcibly of the Spotted Flycatcher. With its pretty dipping kind of flight and nesting economy I was already familiar, having come across the species on more than one occasion during the spring months in Herefordshire; also with its note, “pseep, seep, seep, seep, seep”—resembling on a modified scale the cry, suggestive of mockery, of the Kestrel, and not unlike that of the Wryneck; as a rule, on uttering this note, the example I watched so long and attentively in its favourite haunts raised and threw its head well back. But the method of capturing its food, as recorded above, came to me as a revelation, and, so far as I am justified in my assumption—I can find no allusion to it anywhere—it is a detail which, for obvious reasons, we can hardly affect surprise at having been passed over in silence by writers on ornithology. Of the natural beauties of Clovelly and its surroundings most people know by repute; that is, of course, another

matter. It is enough for me that Ravens, Choughs, Peregrines, and Common Buzzards still flourish in the district, and that they gladdened my eye by occasionally ranging within view. And, again, not everywhere in England are the Green Woodpecker, Great Spotted Woodpecker, Lesser Spotted Woodpecker, Wryneck, Nuthatch, and Tree Creeper all to be met with in the course of an hour's ramble! No wonder Clovelly can add rare birds to its other multitudinous attractions; little welcome there, be it known, for collectors and exterminators.—H. S. DAVENPORT (Ormandyne, Melton Mowbray).

**Aquatic Warbler in Hampshire.**—My neighbour, Mr. Richards, of Farlington, sent me the other day a small bird that had been killed accidentally by his fox-terrier in Farlington Marsh. Neither of us could identify the species, so I sent it to Mr. Pratt, of Brighton, who pronounced it a male specimen of the Aquatic Warbler, *Acrocephalus aquaticus*. It agrees with the coloured plate in Borrer's 'Birds of Sussex.' Possibly some of your readers have recently heard of other specimens.—S. G. SCOTT (Havant Rectory).

I should like to add, with regard to the above interesting note, that although this appears to be the first Hampshire Aquatic Warbler mentioned in your pages, there is also a specimen in Mr. Hart's well-known collection at Christchurch, killed, like this one, by accident, and also on the coast, but at the south-western extremity of the county.—J. E. KELSALL (East Boldre, Southampton).

**The Alleged Summer Appearance of the Shore Lark in Devonshire.**—I notice a paragraph in 'The Zoologist' (p. 365) respecting the presumed occurrence of the Shore Lark in Devonshire during summer. From Mr. H. M. Evans's exact description of the locality and the birds, I have no hesitation in identifying both. I think there can be no reasonable doubt whatever that Mr. Evans has confused *Otocoris alpestris* with a pair of Red-backed Shrikes that have frequented the spot in question all the summer, and have reared a brood there. I have had this pair of birds under close observation the whole season, and have several times pointed them out to my wife, their haunt forming part of a favourite walk of ours. *O. alpestris* is an irregular visitor on migration (early spring and late autumn) to the shores of Tor Bay, occurring sometimes in small parties. *Lanius colluris* is fairly common here in summer, from May up to the middle or end of August.—CHARLES DIXON (Paignton, South Devon).

**The Autumn Song of Birds.**—I am sincerely sorry to find that Mr. Aplin thinks I misrepresented his meaning when criticising his notes on the autumn song of birds (Zool. 1894, p. 410, and August and September last), but, although having received from him a very kind letter on the

subject, and having most carefully re-read the whole of the articles in question, I still fail to see that I misrepresented him. I cannot understand how Mr. Aplin distinguishes the Robin and Starling from the other autumn singers (Zool. 1894, p. 410); nor do I know how these two species can "strike up in October or November" unless they have previously been silent. What I contend for is that they begin to sing in July and early August, and never cease till stopped by cold in winter. I am still firmly of that opinion. Like Mr. Aplin, I have found the Willow Wren silent in the last two weeks of June (Zool. 1894, p. 411, and August last); but I emphatically aver that the bird sings in numbers early in July (not in the hottest midday hours), and ends rather than commences in mid-August. I live opposite a thicket where Willow Wrens swarm. Early in July I could hear a dozen or more in full song at the same time, making a sweet chime with their repeated cadences. Will some other correspondents say which of us is the more correct? Let me state in conclusion that I fully appreciate the conspicuous excellence of Mr. Aplin's notes on birds generally, but I thought him wrong for once; hence this correspondence.—CHARLES A. WITCHELL (Eltham, Kent).

Hours at which some Birds commence to Sing.—Last April, while staying in Gloucestershire, my cousin and I arose early one morning to hear the birds begin to sing, and to see which bird began singing first. We got up at about a quarter past one a.m., went out at 1.45 a.m., and posted ourselves in a small field between the garden and a little wood, so as to hear as many birds as possible. The following are my rough notes taken down at the time, which I thought might interest readers of 'The Zoologist':—  
1.45 a.m. Went out. Very cold. Not a sound. Pitch dark. 2 a.m. One Nightingale singing. 2.25 a.m. Cocks crowing all round (the cocks crowed spasmodically about every quarter of an hour). 2.30 a.m. Dawn just beginning to break. A Sparrow chirped once in the ivy against an outhouse. 2.40 a.m. Nightingales singing beautifully. Not light enough to read by. 3 a.m. No sound but Nightingales. 3.20 a.m. Robin calling and Cuckoo crying. 3.25 a.m. Redstarts singing and calling in garden. 3.27 a.m. Larks began to soar and sing all round. Scarcely light enough to read by. 3.30 a.m. Dead silence for about five minutes. One Nightingale singing far away in a larch wood. 3.35 a.m. Blackbirds began to sing in the garden. Sky Larks still singing and Cuckoo crying. 3.40 a.m. Thrushes singing. 3.47 a.m. Robin singing. 3.55 a.m. Quite light. No stars. Thrushes singing on all sides, making quite a deafening noise. 4 a.m. Great Tit singing up and down note. Wren singing. 4.10 a.m. Chiffchaff singing. 4.20 a.m. Starlings whistling. We did not hear a Willow Wren at all, although they abound in the wood; but their song was probably drowned by the Thrushes.—BERNARD B. RIVIERE (82, Finchley Road, N.W.).

**Popular Ornithological Fallacies.**—May I ask on what grounds Mr. R. V. Calvert, in the September issue of 'The Zoologist,' pitched upon Cuckoos, in default of Jackdaws, as the culprits in the matter of the destruction (by sucking the contents) of some eggs belonging to a Hawfinch, whose nest had been built in the fork of a whitethorn bush in Wychwood Forest in the spring of the present year? My experience leads me to believe that Cuckoos are calumniated when they are alleged to be addicted to this propensity. It is, of course, quite possible that Mr. Calvert may be in possession of that exceedingly desirable—if the charge is to be deemed absolutely proven—and *affirmative* evidence on the point, for which scientific ornithologists have long been waiting; if so, I trust it will be recorded in detail in the pages of 'The Zoologist' without delay. But, failing testimony of this kind, let me warn the rising generation of naturalists not to give a moment's heed to the oft-quoted fallacy, founded purely on *suggestive* evidence, that Cuckoos suck the eggs of little birds. That Cuckoos have been intercepted with eggs, either their own or those of other species, in their bills is no proof of the charge so frequently—as I have found in my walks abroad—preferred against them. Of the Cuckoo's economy so little is known that a large field is naturally presented for speculation; but it appears to me far more likely that the abstraction of an egg from the nest of an alien species may be prompted by an instinctive desire to mask, as it were, the presence of the Cuckoo's egg left behind in its place. Considering the enormous strides ornithology has made during the nineteenth century, the widespread interest that is taken in its study, and the amount of cheap literature that has appeared in connection therewith, it seems to me little short of incredible that, in addition to the one already referred to, there should still linger in the minds of many such preposterous notions as that Green Woodpeckers carefully remove the chips, hewn from their nesting cavity, to a distance; that small birds will not build in the immediate vicinity of other nests; that young Robins kill the old ones in the autumn; that Nightjars suck the milk of goats; that Swallows do not migrate, but hibernate; that only Nightingales sing at night; that Rooks and Crows are identical; that Cuckoos turn into Sparrowhawks in the winter; that Robins retire to the wilds to breed; that Barn Owls suck the eggs of dovecot Pigeons; that sitting Lapwings (that is, *females*) decoy intruders from their nests by their devices; that Nightingales yearly revisit the same spot for breeding purposes; that Landrails possess the gift of ventriloquism; that Wrens forsake if you insert a finger in their nest; that Mistle Thrushes never sing after the end of April; that Green Woodpeckers are particularly clamorous on the approach of wet weather; that Gulls never perch on trees; that the reeling note of the Grasshopper Warbler is not that of a bird at all; that Long-tailed Tits' nests have two

holes, through one of which the sitting bird's tail protrudes ; that Swifts cannot rise from the ground ; that a hooting Owl bodes evil to the listener ; that there are two kinds of Magpie, one that builds in hedges, the other in trees ; that the Wren is the female of the Robin ; that Herons dangle their legs through a hole in the bottom of their nest ; and that Kingfishers breed in the holes of water-rats. I am far from supposing that I have in the foregoing series exhausted the list of vulgar beliefs, but of one thing I am certain, and that is, that a love of the mysterious and marvellous where birds are concerned is the invariable concomitant of ignorance.—H. S. DAVENPORT (Ormandyne, Melton Mowbray).

PS.—In making use of, in an aberrant moment, the somewhat loose and frequently misapplied expression "hybernat" in connection with Swallows, as above, it has occurred to me that purists will not unreasonably infer what I by no means wish to imply. That Swallows on occasions will attempt hibernation, that is, attempt to pass the winter in an animate state in this country, is an accepted fact ; but that they become torpid is quite another matter, and it is in this sense that I have not seldom detected people using the term "hybernat" in connection with Swallows wintering in England.—H. S. D.

**Garden Lists of Birds.**—By way of comparison with Mr. Mathew's interesting lists of birds in last month's 'Zoologist,' I add a list of birds seen by myself from the study window of this house during the ten years we have lived here. My list numbers fifty-five species, the total number observed in the parish (under 1000 acres) being about 101 :—

Mistle Thrush.	White Wagtail.	Green Woodpecker.
Song Thrush.	Tree Pipit.	Great Spotted Wood-
Fieldfare.	Spotted Flycatcher.	pecker.
Redwing.	Swallow.	Lesser Spotted Wood-
Blackbird.	Martin.	pecker.
Redstart.	Sand Martin.	Wryneck.
Redbreast.	Greenfinch.	Cuckoo.
Blackcap.	Hawfinch.	Barn Owl.
Willow Wren.	House Sparrow.	Kestrel.
Hedge Sparrow.	Goldfinch.	Mallard.
Long-tailed Tit.	Linnet.	Wood Pigeon.
Great Tit.	Chaffinch.	Stock Dove.
Coal Tit.	Brambling.	Turtle Dove.
Marsh Tit.	Bullfinch.	Pheasant.
Blue Tit.	Starling.	Grey Partridge.
Nuthatch.	Jay.	Red-legged Partridge.
Wren.	Jackdaw.	Moorhen.
Tree Creeper.	Rook.	Lapwing.
Pied Wagtail.	Sky Lark.	Whimbrel.

In addition to these I frequently hear the Nightingale and Tawny Owl, and this year the Tree Sparrow nested in an old stump in full view of the window, but the nest with three eggs was taken before the birds were

identified. I unfortunately spoiled the nest, thinking it belonged to *Passer domesticus*.—JULIAN G. TUCK (Tostock Rectory, West Suffolk).

[Having opened our pages to the subject of "Garden Lists of Birds," and drawn attention to the interest attached to same, our space will not allow the insertion of further lists.—ED.]

#### REPTILIA.

**Smooth Snake in the New Forest.**—I can confirm the experience of my friend Mr. Corbin regarding this interesting reptile. My house stands on the edge of Beaulieu Heath, in the Forest, and on July 6th, 1894, a beautiful specimen was caught crawling up a laurel bush in our garden. I intended to take it to the Zoological Gardens, but it escaped. It was freely handled, and made to exhibit itself on the dining-room table, but did not defend itself by stinking. Hampshire now claims all the British Reptiles and Batrachians excepting the Turtles and the Edible Frog, but the latter has been introduced into the marshes of the Itchen by Mr. T. A. Cotton, of The Mount, Bishopstoke.—J. E. KELSALL (East Boldre, Southampton).

#### PISCES.

**Thresher Shark and Angel-fish at Lowestoft.**—During a recent stay at Lowestoft, on the morning of Sept. 11th, I saw a freshly-killed Thresher, *Alopecias vulpes*, which was landed from the smack 'Florence and May.' There had been an unusually large take of Mackerel during the previous night, and the fishermen told me that the shoals were met with about twenty miles from Lowestoft. The Shark measured 42 in. in the body, and the upper lobe of the caudal fin exactly another 42 in. There was quite an unusual number of Angel-fishes, *Rhina squatina*, also landed during the three weeks of my stay; I must have seen at least four or five. The fish-wharves at Lowestoft always repay a visit, and I have no doubt many rare and interesting marine forms could be found in the refuse of the trawl-nets, as well as in the maws of the deep-sea fishes. On Sept. 29th the 'Hastings Girl' took a second specimen of the Thresher in her Mackerel nets, which was also landed at Lowestoft, and I believe sent to London; it was much larger than that previously taken, measuring 6 ft. in the body and the same in the whip-like tail, or 12 ft. in all. — THOMAS SOUTHWELL (Norwich).

#### INSECTA.

**Wasp, *Tipula*, and Spider.**—My attention was recently drawn to the struggles of a Wasp and a *Tipula* (Daddy Longlegs) in a Spider's web. I at first thought that they were fellow-captives, and that the Wasp had attacked the *Tipula* under the impression that he was the author of his

misfortunes; but it soon became apparent that this was not the case, as the Wasp quickly stripped the legs and wings off his prey, shook himself free of the web, and carried off the carcase in his mouth. The owner of the web was an interested spectator, but did not take any part in the contest.—R. H. RAMSBOTHAM (Meale Brace Hall, Shrewsbury).

[This communication prompts an interesting question as to the combative power of Spider *versus* Wasp. The recorded verdict is somewhat ambiguous, as the few—probably not nearly exhaustive—notes here appended clearly show. *For the Spider*: The Rev. W. F. Kirby, quoting from Walck ('Araneid de France,' p. 202), relates that one species, *Segestria perfida*, "has been seen even to seize a very active Wasp." The late Prof. Westwood ('Mod. Class. Ins.' vol. ii. p. 247) states that he once observed "a Spider, belonging to the genus *Thomisus*, sucking a Wasp which it had killed. *For the Wasp*: In 'The Zoologist' (1859, p. 6732) is to be found the account of an experiment made by putting a Wasp into a Spider's web. In this case the Spider, who made a rush at the Wasp, was stung in its abdomen, and fell from its web dead upon the ground. In 'Nature,' vol. xvii. p. 381, is an account from the Piræus, describing the chasing and killing of a large hunting Spider by a species of Wasp, probably a *Pompilus*. There is a record in 'The Zoologist' for 1887, p. 310, of an observation made in Ceylon of a Mason Wasp—a large common species—seen dragging a large *Tarantula*, which it had paralysed, across a path. Belt ('Naturalist in Nicaragua,' p. 313) refers to Wasps storing their nests with Spiders, after benumbing them with their stings.

It will thus be seen that in this, as in most other branches of zoology, actual observations on the life-histories of animals are still greatly desiderated. It is probable that a conflict between Wasp and Spider depends in issue very largely on the species, and more particularly the genus, to which each belongs. Both Wasps and Spiders, as well as other animals, vary greatly in their habits and pugnacity; and hence—when possible—the observing naturalist should fortify himself with the additional knowledge imparted by the taxonomist, and thus add to the details of the occurrence the correct names of those which took part in it.—ED.]

## NOTICES OF NEW BOOKS.

*Life in Early Britain; being an Account of the Early Inhabitants of this Island and the Memorials which they have left behind them.* By BERTRAM C. A. WINDLE, D.S., &c. David Nutt.

ZOOLOGISTS who feel an interest in their own species, and would study some of the early factors which have served to mould the British race, will find this little book very helpful, and it is one that was much needed. It sketches the prehistoric and eohistoric eras in this country, from Palæolithic times to the Saxon occupation, and spans the period commencing when human weapons consisted of unpolished stone implements, to the iron sword, the coat of mail, and the Anglo-Saxon Church.

But these annals cannot be confined to a purely archæological consideration, nor can they be properly separated from the details of the early British fauna. Palæolithic man, who has not left an arrow-head to show us that he was acquainted with the use of the bow, lived in a Britain—still connected with the Continent—that would now be considered a hunter's paradise. The Hippopotamus, two species alike of Elephant and Rhinoceros, a cave Bear and a cave Lion, Hyæna, Bison, wild Horse, and Reindeer formed a wild Game which was ample for these poorly equipped savages "to chase and be chased by." Even in later Neolithic times, when England had been separated by the sea from the Continent and from Ireland, and primitive man, though still in the Stone Age, was better armed, although the larger animals had become extinct, there was still a fine mammalian fauna one would fain have seen. Our author here wisely quotes the graphic narrative of Boyd Dawkins. There were "wild boars, horses, roes and stags, Irish elks, true elks and reindeer, and the great wild ox, the urus, as well as the Alpine hare, the common hare, and the rabbit. Wolves, foxes and badgers, martens and wild cats were abundant; the brown bear, and the closely allied variety the grisly bear, were the two most formidable competitors of man in

the chase. Otters pursued the salmon and trout in the rivers, beavers constructed their wonderful dams, and water rats haunted the banks of the streams." Mr. Windle adds the remark that while many of the animals just mentioned are no longer to be found in England, only one, the Irish elk, has become absolutely extinct.

With the Bronze Period, synchronous with Celtic immigration, of which a later band—the Brythons—have been located in the fourth century B. C., we come to historic facts, and Pytheas, who then visited the country, has given his impressions. It was probably then, as our author describes it, covered with vast forests and marshes, "overhung with constant fogs and deluged with frequent rains." Pytheas was probably the first to mention the British beer, known by a Celtic term *curmi*, now *cuirm* in Irish, and *curw* in Welsh, and which the Greek physicians warned their patients against, as "producing pain in the head and injury to the nerves."

We cannot further pursue a subject which not only appertains to Anthropology, but also to the general zoologist, altogether relating to our British fauna, and affording many side lights to the actual status of our animal life of to-day, man included. The size of the book, some 230 pages only, of course denotes that it is suggestive to further reading elsewhere, and a very fair and useful bibliography is given as an appendix. (The name Dr. Beddoes, as written throughout, might with advantage be deprived of its ultimate consonant). Another useful appendix is a County List, giving localities where many primitive remains may be observed.

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*The Vivarium, being a Practical Guide to the Construction, Arrangement, and Management of Vivaria, containing full information as to all Reptiles suitable as Pets, &c. By the Rev. GREGORY C. BATEMAN, A.K.C. L. Upcott Gill.*

THOUGH animals and their habits are of course best studied under natural conditions, there are very many living creatures which can only be observed in captivity by naturalists. Certainly many of the reptiles included in this comprehensive volume—Crocodyles and Pythons, for example—are not usual out-door studies,

and the second are not commonly encountered, though far from scarce in proper localities. We speak of our own experience, having resided in two good Python haunts—the Straits of Malacca and the warm eastern regions of South Africa ; and though Malays frequently brought us these reptiles in the first locality, having also inspected an ample local supply in a dealer's shop in Durban, and purchased a fine specimen from a Transvaal "transport rider," we still never met with a specimen under natural conditions during many forest rambles in both countries.

Very much is to be learned in the successful prevention of voluntary starvation by reptiles in captivity. Our own experience with Snakes, Monitors and other Lizards is a tragic one ; no consummately prisoners ever refused food with equal persistency. Dr. Bateman fully describes the method of necessary artificial feeding, but to seize an 18-ft. Python and force food down its throat is at least a somewhat heroic undertaking, for though a Python is non-poisonous, it can still bite (we have seen the effects of its teeth) and knows how to dispose of its body. We should have been very glad to have possessed the book when sojourning among a rich reptilian population, for it is full of good hints, practical advice, and information as to constructing Vivaria. The illustrations are very satisfactory, and the long descriptive enumeration of Reptiles and Amphibians—for which the writings of Dr. Günther and Mr. Boulenger have been consulted—which may be kept, really constitutes a zoological handbook in which many natural history observations are compiled. No doubt a specialist would find it necessary to make some comments, but books must be judged by the purpose for which they are written, and accuracy in every detail can only be expected and made imperative in the actual thesis of the author. Though we cannot all afford to find the necessary accommodation for Crocodiles and Pythons, Tortoises and Terrapins, Bull Frogs and Salamanders, in comparison to which Orchid-growing would be an economy, there are still very many interesting, small and easily procured reptiles whose housing and observation could not fail to contribute—as they have already done in the past—many of the fresh facts which slowly aggregate to a future knowledge of the real Natural History of Animal Life.

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*A Bibliography of Gilbert White, the Natural Historian and Antiquarian of Selborne.* By EDWARD A. MARTIN, F.G.S. Roxburghe Press.

THE 'Natural History of Selborne' has passed beyond the appreciation and love of naturalists and long since become an English classic, read and to be read as long as our language survives. Whilst science will be coexistent with humanity, few scientific books are perused after a century, save by specialists and the curious, for science is ever advancing, and her publications only describe the area to her new landmarks. Art and literature produce more immortal productions: a great picture is for all the time it can be preserved; a noble tragedy or fine poem receives the imprimatur of humanity; while a few books are never lost and seldom forgotten. Gilbert White, writing in an obscure parsonage, on the simple annals of its surrounding animal life, with no desire for fame, and little expectation of literary canonization, has cast a spell over all readers and charmed every lover of books. The interest in his writings is soon combined with a regard for the author, and we seem to have a personal acquaintance with White as we read him, as well as with the various animals whose life-histories he did so much to unravel and described so well. He was the Nestor of British zoological observers, and incited the study of Natural History in every lover of nature who had the aptitude and industry of observation combined with a facility to record such observations.

Zoology in a very important branch is thus open to all classes, to the leisured squire as well as to the recreative artizan, and an intimacy with the 'Natural History of Selborne' still inculcates the lesson, that in these Islands, as well as in the more prolific Tropics, the cataloguing of a fauna is not the sole end of the science.

The book has gone through many editions, seventy-three according to the investigations of Mr. Martin, commencing with the original edition in 1789, when the author was sixty-nine years of age,\* and within four years of his death, and ending with

\* Bloch, the ichthyologist, had reached the age of fifty-six when he commenced to write on ichthyological subjects.

Macmillan's American edition of 1895. Many competent editors have been engaged in the production of these editions, and as most of them have provided their own editorial notes without reproducing those of their predecessors, it would not be unwelcome to have yet another edition containing all the annotations which have been made from time to time.

The bibliography contributed by Mr. Martin is a most desirable and useful compilation, and will be of great service to librarians and all interested in Selbornian literature. The volume also contains a biography and much information concerning the village, church, and parsonage, which with all the attributes of obscurity have become through the delightful writings of a naturalist one of our well-known and not unvisited literary Meccas.

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*Bæveren (Castor fiber) i Norge, dens Udbredelse og Levemaade* (1896). Af R. COLLETT. Bergen: Griegs Bogtrykkeri. 1897.

THIS brochure on the Beaver in Norway is written by Prof. Collett, of Christiania, and is "Separataftryk af Bergens Museums Aarbog, 1897." Scandinavian scientific literature not infrequently appears in the English language, and in the publication under notice Prof. Collett has not trusted to a general knowledge of Norwegian, in which it is written, but has appended an excellent English summary of its contents.

"The Beaver still belongs to the fauna of Norway, and will, in all probability, be retained amongst it well into the next century, provided only the small amount of care is taken in protecting it as hitherto." Even at the close of the seventeenth century the Beaver had begun to decrease in numbers, though up to the middle of the eighteenth century they were "probably still distributed through most of the woodland valleys, from the southernmost parts of the country, to the farthest confines of Finmarken," and a great number of names, to be met with almost everywhere throughout the land, still bear the designation of the Beaver (Bjor-, Bjur-, Böver-, &c.)\*

\* In France we have similar survivals, bearing witness to its wide distribution in that country, as Bièvre, Beuvron, Beuvray, &c. In this country, Beverley, Bævere (near Worcester), and Nant Françon (the glen of the beavers), in North Wales, are cases in point.

"The occurrence of the Beaver in Norway at the present time is chiefly confined to the Stifts of Christiania and Christiansand (the Amt of Nedenæs, as well as that of Lister and Mandal) . . . The largest tribe is at present located in the middle and southern parts of the river Nisser (or Nid), in Nedenæs Amt."

In 1883 Professor Collett estimated the number of surviving Beavers as about a hundred, and we are glad to read that "it may be regarded as probable that, since that time, the number has been maintained, or possibly somewhat increased."

Twelve photographic plates afford beautiful representations of the natural homes and tree-felling powers of this once abundant animal.

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*The Concise Knowledge Natural History.* By R. LYDEKKER, B.A. F.R.S. ; R. BOWDLER SHARPE, LL.D. ; W. F. KIRBY, F.L.S. ; W. GARSTANG, M.A., F.Z.S. ; B. B. WOODWARD, F.L.S., F.S.S. ; F. A. BATHER, M.A., F.G.S. ; R. KIRKPATRICK ; R. I. POCOCK ; and H. M. BERNARD, M.A., F.L.S. Hutchinson & Co.

DURING recent years there have been published several illustrated general Natural Histories. We might mention, in sequence, Wood's, Cassell's, and the "Royal." Of handy, condensed, or concise volumes on the subject, Baird's 'Student's Natural History' still held the field for handy reference to a busy man, a student, or a specialist outside his own study. Baird's volume referred to the "Animal, Vegetable, and Mineral Kingdoms"; and at least Plants should form a subject when the term "Natural History" is employed. We therefore prefer to consider this publication as devoted to a concise knowledge of Zoology, and if we cannot rely on the information provided by such a specially strong staff of authorities as have written the volume under notice, then should our faith be in vain. Most of the names of the writers are household words on their subjects. With Lydekker on Mammals, and Sharpe on Birds, and Woodward on Mollusca, we recognize old friends and old instructors; while the names of Garstang, Bather, and Bernard are linked with the groups they study. Mr. Kirby has written much on insects, but

we do not remember him having previously essayed the description of the Crustacea. Mr. Pocock has undertaken the subject "Vermes," and Mr. Kirkpatrick has contributed a necessarily short account of the Bryozoa, a term he prefers to Polyzoa.

This book is an undoubtedly useful manual for reference, and should find a place on most shelves. Journalists might well, and with advantage, keep it handy.

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*Citizen Bird: Scenes from Bird-Life in Plain English for Beginners.* By MABEL OSGOOD WRIGHT and ELLIOTT COUES. New York: The Macmillan Company. London: Macmillan & Co. Limited.

THIS book is dedicated to "all boys and girls who love birds and wish to protect them." The birds referred to in conversational method, recalling our 'Sandford and Merton' of long ago, belong to the North American Continent; and the name of Dr. Elliott Coues is sufficient for those critics who would deprive children of a book calculated to foster a love of the subject because of some errors in nomenclature. We still think a natural history publication may be too elementary in style, and that a young naturalist will grapple with and surmount many difficulties when his heart is in the subject. The merits of this work are its scientific accuracy, its illustrations, a short but clear description of each bird at the end of its conversational ordeal; and the last chapter, which is devoted to an orderly review of the birds referred to, "each bearing its scientific name, which the wise men write in Latin."

## EDITORIAL GLEANINGS.

THE British Museum Blue Book, giving among other returns a "Statement of the Progress made in the Arrangement and Description of the Collections, and an Account of Objects added to them in the year 1896," has been issued. Its perusal leaves no doubt as to the prosperity of our great institution, and is as satisfactory to the zoologist as to the British ratepayer. To really estimate its present flourishing condition it may be well to refer to the estimation in which it was held some seventy years ago. In the first number of the first volume of 'The Magazine of Natural History,' published in 1829, a writer thus expresses himself:—"There is no country that has the same facilities for procuring objects of natural history from every region of the globe as Great Britain; there is no country where larger sums of money have been expended to procure them; and yet there is no country in the civilized world where there are fewer facilities offered to the student of natural history than in England." Again, and in the same volume, we read:—"The zoological collections in the British Museum may be briefly dismissed. The whole collection of insects is contained in four small cases; nor are these completely filled. The birds and mammiferous quadrupeds are arranged according to the order of Linnæus, but want of room prevents their being placed in situations sufficiently accessible for inspection. The species of quadrupeds are not numerous, owing, I believe, to the decay which too speedily takes place in stuffed specimens, particularly in the atmosphere of London. From the liability to decay, the difficulty with which they are replaced, and the great space they occupy, stuffed specimens of quadrupeds might perhaps be conveniently dismissed from our collections, except of such rare animals as can seldom, if ever, be brought alive to Europe."

An inspection of our National Galleries is now the best answer to the warnings of this Cassandra; well-stocked entomological rooms represent the four badly filled small cases; the birds are unrivalled, and our British ornithological fauna may be said to be seen in a state of nature; while as to the boycotted quadrupeds, the mammals are one of the strong features of the institution, and are rapidly becoming too numerous for the sole hands of the talented mammalogist in charge. It is impossible to allude to the many acquisitions of the last year, but we may draw attention to some of the principal additions derived from "Purchases," "Bequests," and "Presents."

*Mammalia*.—A valuable series of Deer and Antelopes from the collection of the late Sir Victor Brooke.

*Aves*.—First in the list may be mentioned the Seebohm Collection, bequeathed by that well-known ornithologist, comprising, in skins, some 16,950 specimens, and including 235 skeletons. By purchase the collections were also enriched by the fine series of birds, chiefly Woodpeckers, brought together by the late Mr. Edward Hargitt; the Steere Collection of Birds from the Philippine Islands; and a fine collection of Fossil Bird remains from Patagonia, collected by Señor Ameghino.

*Insecta*.—Messrs. Godman and Salvin, who are among the most munificent donors, have presented 6192 Malacoderm Coleoptera from Central America; 4766 Butterflies (*Pierinæ*), all Old World species; 1375 Butterflies (*Satyrinæ*), and 610 *Sphingidæ*, and *Castniidæ*, from Central America. Mr. Godman has also presented the collection of British Hymenoptera made by Mr. Peter Cameron, comprising 2600 specimens, besides numerous microscopic preparations, larvæ, drawings, &c. There have also been purchased the Power Collection of British Coleoptera and Hemiptera, and the collection of Oriental Hymenoptera formed by Col. C. T. Bingham.

Specimens representing the life of the past, as well as that of the present, have been largely added. Lady Prestwich has presented the entire collection of Fossils brought together by her husband, the late Sir Joseph Prestwich; Mrs. Crawford Williamson has given ninety-three microscopic slides illustrative of works on the Recent Foraminifera by her husband the late Prof. W. Crawford Williamson; and Mr. G. Shrubsole has been the donor of 460 specimens of Palæozoic Polyzoa which belonged to his father, the late George William Shrubsole; while from Mrs. Pengelly have been received about 400 fossils selected from the collection of her husband, the late Mr. William Pengelly.

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We recently (pp. 387-8) were able to report on the flourishing condition of both the Museum of Comparative Zoology at Harvard College and the Museum of the Chicago Academy of Sciences. We are, however, sorry to see by the 'Ann. Rept. Smiths. Instit. to July, 1895,' published in 1896, and just received, that the Secretary writes in a much more pessimistic manner on the finances and capacity of the National Museum at Washington:—"The problem of even providing shelter of any kind for the vast amount of material daily received from persons interested in the growth and work of the Museum still remains unsolved. The Institution is placed in an embarrassing position. It has been designated by law as the only depository of collections offered to, or made under the auspices of, the Government, and cannot, under the law, refuse to receive them. The fact remains, however, that when accepted there is no suitable place in which to

store them, and no space in the Museum building to exhibit such of the objects as should properly be shown to the public. As I have already pointed out, there is probably no museum in the world in which so small a proportion of the objects worthy of exhibition is visible to the public, or in which the objects are crowded together so closely. It is now more true than ever that if another museum building as large as the present one were provided, it could be at once filled with specimens already on hand." We feel no doubt that our American cousins will be equal to the occasion.

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OUR well-known contributor, Mr. J. Steele-Elliott, has favoured us with the first instalment towards 'The Vertebrate Fauna of Bedfordshire.' This is not only excellently printed on good paper, but is also issued for private circulation, a most commendable instance of a true zoological spirit, and one that should meet with warm appreciation, especially as Bedfordshire "has received less attention than almost any other county." The work has commenced with the birds, and the author informs us that when complete it is expected that the first volume will be devoted to Aves, and the second volume will embrace Mammals, Reptiles, Amphibians, and Fishes. We trust nothing will interfere with the due completion of a very useful book.

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MR. T. D. A. COCKERELL has contributed to the 'Proc. United States Museum' a memoir on "The Food Plants of Scale Insects (*Coccidae*).'' The author remarks that two practical points may be emphasized—one, the unexpected number of Coccids found on many of the cultivated trees and shrubs; and the other, the frequency with which species dangerous to fruit trees will occur on ornamental plants, which may be carried from place to place, and be the means of disseminating the scales. "It must, of course, be understood that the plants given as the hosts of *Coccidae* have been in very many cases so infested only since they came into cultivation. It would be very desirable to distinguish in every case between the endogenetic and exogenetic Coccids on a plant, and also between those exogenetic in a state of nature, and those only so in cultivation. But to do this would require more information than we at present possess." This is a welcome memoir on the subject, bringing the bibliography up to date, and giving a botanical classification to these insect-pests.

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WE have received from Messrs. Adam and Charles Black a pamphlet written by J. C. Ewart, Regius Professor of Natural History, Edinburgh, on 'A Critical Period in the Development of the Horse.' We read that, according to the evidence obtained by the Royal Commission on Horse Breeding, it appears that about forty per cent. of the mares selected for

breeding fail to produce offspring during any given year. This is a very high percentage of failure, but from reports recently received it seems to be still higher in certain districts in India. The author discusses and describes the foetal appendages in the Horse, and proceeds to show that "while at the outset the Horse embryo has the same simple apparatus as the Opossum, a stage is soon reached when more elaborate and more permanent nutritive appliances are provided." Further, "that when the new apparatus is being substituted for the old,—when the Opossum plan is coming to an end, and the more permanent appliances are barely in working order,—that at this critical period the Horse embryo may readily drag its anchor and escape—behave as if it were a young American Opossum or an Australian Kangaroo." We were not previously aware that "there is a case on record of a mare bringing forth twins, a foal and a mule. She was presented to a Jackass fifteen days after being served by a Horse."

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THE Belgian South Polar Expedition left Antwerp in August on the steamer 'Belgica,' which, after a mishap to the machinery, again started from Ostend. This expedition takes provisions for three years, much of it consisting of tinned foods. M. de Gerlache and his officers express absolute confidence in the success of the expedition. The 'Belgica' is a whaling vessel of 263 tons, barque-rigged, and with a speed of seven knots. For some months she has been lying at Sande Fiord, in Norway, and has undergone considerable alteration with the view of strengthening her for the rough work before her. She has been furnished with every sort of apparatus likely to facilitate the objects of the expedition. Soundings to any depth will be taken with the sounding-line invented by the Prince of Monaco; fishing will be possible at a depth of 4000 ft., and the animal life of the upper sea-beds will be made the subject of study. It is expected that the 'Belgica' will be absent about two years. The costs of the expedition are being defrayed by public subscription.

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BETWEEN seven and eight p.m. on Aug. 16th a flock of Wild Geese was observed flying in the air near the 'Nag's Head,' Holloway. They flew round once, and then made off in the direction of Camden Town, forming crescents in their flight. This is a sight very rarely seen in London.— ('Westminster Gazette.')

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ONE of the finest private collections of horns from South Africa yet formed is now being arranged in the town museum at Brighton, where it has been placed on loan. It was got together on the spot by Mr. J. Rosen, and includes upwards of 370 pairs, representing every kind of horned

animal to be met with south of the Zambesi. It is particularly rich in horns of the Koodoo, Eland, Klipspringer, and Gemsbok, or Oryx, which some identify with the Unicorn, its two horns often resembling in profile a single horn.—(' Daily News.')

ACCORDING to the 'Globe,' a subterranean laboratory has been opened at the Museum of Natural History, which is situated in the Jardin des Plantes, Paris. It has been created in order to study the influence of darkness on animals, and discover by experiment how animal species are thus modified. In short, it is an attempt to apply the doctrine of evolution by experiment; and as such must be regarded as unique in the world—a new departure, in fact. The idea seems to have originated in the researches made not long ago on the animals of the Catacombs of Paris.

IN the 'Records of the Australian Museum,' vol. iii. No. 2, is a description, by Mr. R. Etheridge, Jun., of "An Australian Sauropterygian—*Cimoliosaurus*—converted into Precious Opal." The search for Opal in the Upper Cretaceous at the White Cliffs Opal-field on Momba Holding, about sixty-five miles north-north-west of Wilcannia, Co. Tungnulgra, has been signalized by the discovery of many beautiful examples of the entire conversion of the shelly envelopes of Pelecypoda and Gasteropoda, the internal shells of Belemnites, and Reptilian remains into precious opal by a process of replacement. Among other examples, and pre-eminent for its beauty, is a bivalve in the possession of a jeweller of Melbourne, and "without exception one of the most beautiful conditions of fossilization I ever beheld." The Survey Collection, previous to the Garden Palace fire, contained an ammonite wholly converted into precious opal, six inches in diameter.

